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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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02/25/2005

Masatomo Kurata

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08/14/2008

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EXAMINER

SNYDER, ADAM J

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

08/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/525,925	Applicant(s) KURATA, MASATOMO	
	Examiner Adam J. Snyder	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 May 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 05/21/2008 has been entered and considered by examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 2, 4, and 5** are rejected under 35 U.S.C. 102(e) as being anticipated by Foxlin (US 2003/0023192 A1).

Claim 1, Foxlin (Fig. 1, 2A, 2B, and 4C) discloses a head-tracking method (Paragraph [0012]) for detecting three-dimensional movement of the head using three axes as points of reference, an x-axis extending in a right-to-left direction of the head, a y-axis extending in a front-to-back direction of the head, and a z-axis perpendicularly traversing a horizontal surface of the head (wherein figures 2A and B shows X, Y, and Z axis movement of the head that is detected), the method comprising:

calculating (106) a yaw angle (Paragraph [0043]; wherein angular rate sensors output is integrated to give angular position; for example yaw angle) from an integral

value of an output of a gyro sensor (204y; Paragraph [0044]), the yaw angle representing an angle rotating about the z-axis (wherein figure 2A shows a gyro used for element 204y which is used to calculate the yaw angle around the z-axis);

calculating (110) both a pitch angle and a roll angle (Paragraph [0072]) from an output of a two-axis tilt sensor (Paragraph [0052]), the pitch angle being formed between the z-axis and the y-axis (wherein head is tilted front or back; Paragraph [0052]), and the roll angle being formed between the z-axis and the x-axis (wherein head is tilted left or right; Paragraph [0052]); and

correcting (108) the yaw angle calculated (D) from the output of the gyro sensor (F) using the calculated pitch angle and roll angle (S; 478, 480, 482, and 484; wherein Foxlin is reducing drift which can be in yaw, pitch, and roll direction).

Claim 4, this differs from claim 1 in that it states "the pitch angle and the roll angle from an angular velocity output of the tilt sensor".

Foxlin discloses the pitch angle and the roll angle (Paragraph [0072]) from an angular velocity output of the tilt sensor (Paragraph [0052]).

Claims 2 and 5, Foxlin (Fig. 4C) discloses wherein a period for calculating the yaw angle from the output of the gyro sensor (460, 462, 464, 466, 468, and 470) is shorter (Paragraph [0059]; wherein calculated tilt sensors after $\frac{1}{4}$ seconds) than a period for calculating the pitch angle and the roll angle (Paragraph [0072]) from the output of the tilt sensor (Paragraph [0052]).

Response to Arguments

Applicant's arguments filed 05/21/2008 have been fully considered but they are not persuasive.

In view of amendment, the references of Foxlin (US 2003/0023192 A1) have been used for new ground rejection.

Examiner respectfully disagrees with applicant. Foxlin's drift compensation module does teach or suggest a correcting yaw angle using calculated pitch and roll angles. Foxlin discloses that when the head stops moving an incorrect motion (i.e. drift) is still sensed by the gyros which is then corrected by the pitch and roll angles. The output from the drift compensator is a corrected orientation which includes yaw.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam J. Snyder whose telephone number is (571) 270-3460. The examiner can normally be reached on M-F (8:30am-5pm) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AJS/
Examiner, Art Unit 2629
08/05/2008

/Chanh Nguyen/
Supervisory Patent Examiner, Art
Unit 2629